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NOTES ON *LEUCOJUM* AND *NARCISSUS* (AMARYLLIDACEAE) NATURALIZED IN TEXAS

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ABSTRACT

Leucojum aestivum, *Narcissus* ×*intermedius*, and *N. jonquilla*, and *N.* ×*odorus* are documented as apparently naturalized elements of the Texas flora. *Narcissus jonquilla* produces fertile seeds, but the *Leucojum* and the two *Narcissus* hybrids are seed-sterile, remarkable especially in view of the abundance of *N.* ×*intermedius*. A large population of *L. aestivum* is vouchered from along Interstate Highway 20 southeast of Marshall in Harrison Co. *Narcissus* ×*intermedius* is vouchered from large populations along I-20 in Harrison and Gregg cos., *N. jonquilla* from a large I-20 population in Van Zandt Co., and *N.* ×*odorus* from an I-20 population in Gregg Co. Color photos further document the observations and additional collections are cited for each of the taxa. Texas collections of plants outside of cultivation also are cited for *N. papyraceus*, *N. pseudonarcissus*, and *N. tazetta*.

KEY WORDS: *Leucojum aestivum*, *Narcissus* ×*intermedius*, *N. jonquilla*, *Narcissus* ×*odorus*, Amaryllidaceae, naturalized, Texas

The present note documents the uncultivated occurrence of several horticultural herbs of Amaryllidaceae along Texas roadsides, with an attempt to distinguish between records of plants cultivated or persisting from cultivation versus those clearly outside of cultivation. Two of the taxa (*Narcissus jonquilla* L. and *N.* ×*intermedius* Loisel) are abundant, *N.* ×*odorus* L. and *Leucojum aestivum* L. less so.

Photos (Online Appendix 1, Harrison Co.; Online Appendix 2, Gregg Co.) indicate the extent of the *Leucojum* and *Narcissus* populations and show individual plants and features. Vouchers are to be distributed.

LEUCOJUM AESTIVUM L. Summer snowflake

Leucojum aestivum is reported to occur outside of cultivation widely in the eastern USA (Straley & Utech 2002), with the westernmost localities in Texas; a few localities are reported in California and Oregon (Kartesz 2010). The species has been recorded from 27 Louisiana parishes (Thomas & Allen 1993), including Caddo, DeSoto, and Sabine parishes on the Texas border. In Arkansas, it has been recorded from 3 counties (Smith 1988).

In Texas, *Leucojum aestivum* previously has been reported from scattered localities (Diggs et al. 2006; Nesom & Brown 1998). The plants from Dallas Co. were explicitly noted to be escaped, but the Walker Co. collections (SHST) are from cultivated or persisting plants. The present report documents a large, clearly non-cultivated population of more than a hundred plants along Interstate Highway 20 southeast of Marshall.

Harrison Co.: ca. 0.3 mi E of jct I-20 and Texas FM 31, on N side of I-20, ca. 1 mi E of jct I-20 and Hwy 59 on S side of Marshall, gently sloping shoulders of the hwy and swale between the hwy and frontage road, 100+ large clumps scattered irregularly for 100 yards along the hwy frontage, in full flower, mixed with naturalized *Narcissus* ×*intermedius* in one part of the population, 28 Mar 2010, *Nesom 2010-1* (ASTC, BRIT, TEX).

Additional collections. Texas. **Dallas Co.**: White Rock Lake Park, low, wet, shaded, grassy area, black soil, escaped from cultivation, 18 Mar 1977, *Barnette 64* (SMU). **Panola Co.**: (ASTC, not observed).

Leucojum aestivum is not a "summer" snowflake (i.e., the common name) in Texas, as the plants were in full flower on March 28. Straley and Utech (2002) noted that the flowering period in North America is spring to early summer. At the Harrison County site, mature and maturing fruits examined (4 April 2010) from 40 plants produced no fertile seeds. There is no evidence or indication that the species was originally established at this site through cultivation, and the pattern of dispersion of the plants seems difficult to explain in terms of mechanical movement of the bulbs.

NARCISSUS ×INTERMEDIUS Loisel Star jonquil

Narcissus ×*intermedius*, according to Straley & Utech (2002), is "known to persist in Louisiana and can be expected elsewhere in the flora area." Serviss (2009) notes that it is "sometimes encountered outside of cultivation in Arkansas, though it is not as common as some of the other *Narcissus* taxa in the state." Observations in the present paper document the occurrence of *N.* ×*intermedius* outside of cultivation in a number of counties of northeast Texas, where it apparently has been established at least since the late 1940's (see collection citations below). The abundance and patterns of dispersion of these plants initially suggested to me that they are spreading by seeds, but this was contradicted by confirmation of seed-sterility. Reproduction is only by lateral bulbs.

Narcissus ×*intermedius* is a hybrid between *N. jonquilla* ($2n = 14$) and *N. tazetta* ($2n = 22$) (Meyer 1966). The leaves are flattened, broad (3–10 mm), and concave, the scapes are 3–6-flowered, and the tepals are relatively small and to light or creamy yellow, the corona orange-yellow and distinctly darker than the tepals. Maturing ovaries are ellipsoid-obovoid, 11–14 mm long. Plants and populations of *N.* ×*intermedius* along Interstate Highway 20 in northeast Texas probably were in full flower in early to mid March. At the Harrison County locality, mature and maturing fruits examined (4 April 2010) from 40 plants produced no fertile seeds; at the Gregg County locality, mature and maturing fruits examined from 20 plants produced no fertile seeds.

Many of the earlier collections of *Narcissus* ×*intermedius* had been identified as *N. tazetta*, but *N. tazetta* generally flowers later and usually is distinct even in the herbarium, because of its characteristically bright white tepals and flat leaves (see further comments below, under *N. tazetta*).

Harrison Co.: SE of Marshall, ca. 0.3 mi E of jct Hwy I-20 West and Texas FM 31, ca. 1 mi E of jct I-20 and Hwy 59 on the S side of Marshall, on the N side of I-20, gently sloping shoulders of the hwy and swale between the hwy and frontage road, large clumps scattered for 50 yards along the hwy, past full flower, mixed with naturalized *Leucojum aestivum* in one area of the population, tepals yellow, corona slightly darker and yellow to orangish yellow, 28 Mar 2010, *Nesom 2010-2* (BRIT, TEX, ASTC). **Gregg Co.**: S side of Hwy I-20, just W of jct with Texas Hwy 135, ca. 12 mi W of Longview exit (Hwy 259), large population of several hundred clumps on steep sandy roadbank and shoulder of drainage channel, mostly past flower, 4 Apr 2010, *Nesom 2010-4* (ASTC, BRIT, TEX).

Additional collections examined. Texas. **Gregg Co.**: 4 mi NE of Longview on FM 2208, roadside, sandy soil, 31 Mar 1975, *Colquitt 42* (BRIT). **Panola Co.**: 9.5 mi W of Carthage, clayey

ditch bottoms, 24 Feb 1954, *Shinners 18174* (SMU). **Rusk Co.**: 4 3/4 mi SW of Henderson, few plants on sandy roadside, 11 Mar 1949, *Cory 54981* (SMU). **Smith Co.**: 11 2/3 mi NW of Wright City, few plants on sandy roadside, 11 Mar 1949, *Cory 54881* (SMU); 2 mi NW of Mt. Sylvan, sandy clay road fill in pastured stream bottoms, 26 Feb 1954, *Shinners 18210* (SMU). **Walker Co.**: W edge of Huntsville, 1 plant in grassy roadside ditch, an escape from cultivation from yard on low hill, 6 Mar 1948, *Cory 53925* (SMU).

NARCISSUS ×ODORUS L. Campernelle jonquil

Narcissus ×odorus is "one of the most frequently cultivated *Narcissus* in Arkansas and one of the most commonly encountered outside of cultivation" (Serviss 2009). It is documented by Smith (1988) from three Arkansas counties and by Thomas and Allen (1993) from 11 Louisiana parishes. It apparently has not previously been documented from outside of cultivation in Texas.

Narcissus ×odorus is a hybrid between *N. jonquilla* ($2n = 14$) and *N. pseudonarcissus* ($2n = 14$) (Meyer 1966). Mature and maturing fruits examined (4 April 2010) from 10 plants at the Gregg County locality produced no fertile seeds. The plants are characterized by flowers 1–2(–3) per scape with yellow, uniformly colored tepals and corona, relatively narrow tepals, and a distinctly lobed corona. The leaves are flattened and deeply concave, similar to those of *N. ×intermedius* but narrower in width (3–6 mm).

At the Gregg County locality, the plants of *Narcissus ×odorus* were in dense clumps at and near the top of the steep roadbank. They occur at the edge of a much larger population of *N. ×intermedius* (*Nesom 2010-4*), the two barely intermixed only where in contact. According to the owner (who stopped to question me) of the property adjacent to the road, there has never been a home site at the locality, now a pasture and cut-over woods.

Gregg Co.: S side of Hwy I-20, just W of jct with Texas Hwy 135, ca. 12 mi W of Longview exit (Hwy 259), population of ca. 30 large clumps near top of steep sandy roadbank, at the edge of a large population of *N. ×intermedius* (*Nesom 2010-4*), tepals and corona uniformly yellow, mostly past flower, 4 Apr 2010, *Nesom 2010-5* (ASTC, BRIT, TEX).

NARCISSUS JONQUILLA L. Jonquil

Narcissus jonquilla is known to occur outside of cultivation widely in the eastern USA (Straley & Utech 2002; Kartesz 2010). The species has been recorded from 21 Louisiana parishes (Thomas & Allen 1993), including Vernon, DeSoto, and Sabine on the Texas border. In Arkansas, it has been recorded from 12 counties (Smith 1988).

In Texas, *Narcissus jonquilla* has been reported from Grayson and Hunt cos. (Diggs et al. 2006), Madison Co. (Neill & Wilson 2001), and Victoria Co. (TEX voucher). The collection from Madison Co. was from a cultivated plant (TAMU voucher); label information on the Victoria Co. collection (TEX voucher) does not indicate whether the plant was cultivated or naturalized; no voucher was located for the Grayson Co. collection cited by Diggs et al. (2006); the Hunt Co. collection is confirmed as naturalized and cited below.

The present report documents *Narcissus jonquilla* as unambiguously naturalized along the side of Interstate Highway 20 northwest of Canton (Van Zandt Co.). The plants appear to be typical of the species, with terete stems, 1–2(–3) flowers per scape, and small, uniformly golden yellow corollas. Mature fruits are broadly ellipsoid to short-cylindric, 7–10 mm long, and produce 2–3 seeds per carpel (10 plants sampled, 28 March). Among the Texas taxa observed here, *N. jonquilla* (at least this particular population) apparently is the only one that produces fertile seeds.

Van Zandt Co.: NW of Canton, between Hwy I-20 West and frontage road, W side of Co. Road 3439/3442, ca. 0.6 mi E of Turner-Hayden Road, broad open field with low areas and drainages, thousands of plants and clumps over ca. 1200 square yards, past full flower, 28 Mar 2010, *Nesom 2010-3* (ASTC, BRIT, TEX).

Additional collections examined. Texas. **Erath Co.**: 1 mi NE of Stephenville, wet land, 1 Apr ca. 1961, *Caddell 509* (SMU). **Hunt Co.**: 4.5 mi E of Greenville, sandy clay road shoulder, 6 Mar 1949, *Shinners 10631* (SMU). **Newton Co.**: just E of Texas Hwy 87 in Burkeville, graveyard, 19 Feb 2007, *Allen et al. 19612* (BRIT). **San Augustine Co.**: 2 mi W of San Augustine, foot of road fill near small stream, sandy clay, 23 Feb 1954, *Shinners 18149* (SMU). **Shelby Co.**: 11.5 mi NE of Center, sandy clay roadside, 23 Feb 1954, *Shinners 18130* (SMU).

Excellent photos of naturalized *Narcissus jonquilla* from **Nacogdoches Co.** are on the Pineywoods Plants Digital Gallery (Van Kley 2010)—photographed in the spring of 2003 from plants along Hwy 21 East near the Nacogdoches city limit (fide James Van Kley pers. comm.).

Other species of *Narcissus* outside of cultivation in Texas

Many species and forms of *Narcissus* are cultivated in Texas. An excellent online overview of the genus, with photographs and commentary, that covers all or most of the Texas species and hybrids is given by Serviss (2009) for Arkansas. The entry for *Narcissus* in Wikipedia (2010) also gives a useful overview of the genus. A number of useful references are available, e.g., Lee (1966), Blanchard (1990), Jefferson-Brown (1991), Heath & Heath (2001), Hanks (2002a, 2002b).

In addition to the three taxa of *Narcissus* discussed and documented above, three others are known to occur outside of cultivation in Texas.

NARCISSUS PSEUDONARCISSUS L. Daffodil, trumpet narcissus

Narcissus pseudonarcissus was reported for Hunt and Grayson counties by Diggs et al. (2006); vouchers for these records have not been located. Scattered plants of *Narcissus pseudonarcissus* are encountered in Fort Worth (Tarrant Co.) outside of cultivation and apparently in situations where it seems unlikely that they were planted. All such that I have seen have been seed-sterile.

Collections examined. Texas. **Smith Co.**: western Tyler, N of Pine Burr Road, one plant seen in open pine woods, 17 Feb 1950, *Cory 56979* (SMU). **Rockwall Co.**: cemetary near Hwy 66, open grassy area, 27 Feb 1983, *Pendleton 14* (BRIT). **Upshur Co.**: N side of Hwy 154, 6.5 mi W of Gilmer, clumps along the roadside, 23 Feb 2001, *Chevalier 19* (TAMU, fide M. Reed). **Wood Co.**: jct of Hwy 154 and Hwy 182, 20 Feb 1976, *Sampson 6* (SMU).

NARCISSUS TAZETTA L. Polyanthus narcissus, cream narcissus

Narcissus tazetta has been reported and recorded from various localities in Texas, but the occurrences apparently are isolated and it does not appear to be abundant anywhere. Collections of *N. tazetta* (TEX vouchers) mapped by Kartesz (2010) from El Paso and Hays counties are explicitly from cultivated plants; there is no TEX-LL voucher for the mapped collection from Victoria County.

Narcissus tazetta varies greatly in flower size and color, number of flowers per scape, and leaf width. Flowers "range from almost white, with the corona pale cream in color, to flowers with a yellow perianth and orange corona" (Serviss 2009). All Texas plants observed here of *N. tazetta* apparently have white tepals, but given the potential range of overlap in corolla color between *N. tazetta* and *N.* ×*intermedius*, identification of *N. tazetta* should be confirmed by the presence of flat

leaves (vs. deeply concave in *N.* ×*intermedius*). *Narcissus tazetta* also apparently is distinct in its April flowering (vs. mostly February and March in *N.* ×*intermedius*).

As in other taxa of *Narcissus*, variability in *N. tazetta* at least partly reflects strong and long-continued artificial selection. The native range of *N. tazetta*, however, stretches from the Iberian peninsula and north Africa across Asia through the Himalayan region to Japan, and Meyer (1966) recognized 15 subspecies within the species.

Collections examined. Texas. **Angelina Co.**: Lufkin, escaped ornamental in large clump, 7 Apr 1960, *Gentry and Barclay 18498* (LL). Brazos Co.: Bryan, S side of Hwy 21, ca. 2 mi E jct. Hwy 47, 17 Feb 2002, *Peel 7* (TAMU, fide M. Reed). **Fannin Co.**: Meadow about 1 mi N of Monkstown, Rte 100, escape!, flowers white with yellow crown, 25 Apr 1969, *Correll 37077* (LL). **Galveston Co.**: Bacliff, 500 block of Baker St. at Baker St. and Covert St., escaped from cultivation, 31 Jan 1975, *Waller and Bauml 3341* (TEX). **Smith Co.**: 13.2 mi E of Tyler on Hwy 31, hwy right-of-way, not near house, 23 Apr 1953, *Shinners 14403* (SMU). **Van Zandt Co.**: 10 mi SE of Canton on US 64, road margin, clay, 26 Apr 1975, *Gregg 37* (SMU. **San Augustine Co.**: 2 mi N of San Augustine, foot of road fill near small stream, lvs flat, 23 Feb 1954, *Shinners 18150* (SMU).

NARCISSUS PAPYRACEUS Ker Gawl. Paper-white narcissus, paperwhite

Narcissus papyraceus was reported for Brazos County by Diggs et al. (2006), but no voucher has been located.

Collection examined. Texas. **Newton Co.**: Jesse Lee Park, off Texas Hwy 363, creek bank, 19 Feb 2007, *Allen et al. 19644* (BRIT).

Straley & Utech (2002) noted that "Although *Narcissus papyraceus* and *N. tazetta* are distinct and easily distinguished as fresh specimens, they are very difficult to separate in herbarium material." Serviss (2009), however, observes that "The only real consistent distinguishing characteristic of *N. papyraceus* from *N. tazetta* is its completely white corona (the coronas of *N. tazetta* are cream, yellow, or orange in color)." Meyer (1966) treated *N. papyraceus* as *N. tazetta* subsp. *papyraceus* (Ker Gawl.) Baker. In the Italian flora, Pignatti (1982) included *N. papyraceus* as a probable synonym of a more broadly defined *N. tazetta* subsp. *tazetta*.

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LITERATURE CITED

Blanchard, J.W. 1990. *Narcissus*—A Guide to Wild Daffodils. Alpine Garden Society, Woking, England.

Diggs, G.M., B.L. Lipscomb, M.D. Reed, and R.J. O'Kennon. 2006. Illustrated Flora of East Texas. Volume 1. Sida, Bot. Misc. 26: 1–1594.

Hanks, R.G. 2002a. The biology of *Narcissus*. Pp. 1–18, in R.G. Hanks, (ed.). Narcissus and Daffodil: The Genus *Narcissus*. Taylor & Francis, London and New York.

Hanks, R.G. (ed.). 2002b. Narcissus and Daffodil: The Genus *Narcissus*. Taylor & Francis, London and New York.

Heath, B. and B. Heath. 2001. Daffodils For North American Gardens. Bright Sky Press, Houston, Texas.

Jefferson-Brown, M.J. 1991. *Narcissus*. Timber Press, Portland, Oregon.

Kartesz, J.T. 2010. Floristic synthesis of North America. A Synonymized Checklist and Atlas with Biological Attributes for the Vascular Flora of the United States, Canada, and Greenland. Ver. 1.0.3679.36568 (January 2010).

Lee, G.S., Jr. (ed.). 1966. Daffodil Handbook. Amer. Hort. Mag. 45, No. 1, i–xii, 1–227.

Meyer, F.G. 1966. *Narcissus* species and wild hybrids. Amer. Hort. Mag. 45: 47–76.

Neill, A.K. and H.D. Wilson. 2001. The vascular flora of Madison County, Texas. Sida 19: 1083–1121.

Nesom, G.L. and L.E. Brown. 1998. An annotated checklist of the vascular plants of Walker, Montgomery, and San Jacinto counties, Texas. Phytologia 84: 107–153.

Pignatti, S. 1982. Flora d'Italia, Vol. 3. Edagricole, Bologna.

Serviss, B.E. 2009. Arkansas *Narcissus*. Dept. of Biology, Henderson State Univ., Arkadelphia, Arkansas. <http://www.hsu.edu/default.aspx?id=39002> Accessed April 2010.

Smith, E.B. 1988. An Atlas and Annotated List of the Vascular Plants of Arkansas (ed. 2). Published by the author, Fayetteville, Arkansas.

Straley, G.B. and F.H. Utech. 2002. Amaryllidaceae [*Leucojum* 26: 293; *Narcissus* 26: 294–296]. *In* Flora of North America Editorial Committee (eds.). Flora of North America North of Mexico, Vol. 26. Oxford Univ. Press, New York and London.

Thomas, R.D. and C.M. Allen. 1993. Atlas of the Vascular Flora of Louisiana, Volume I: Ferns and Fern Allies, Conifers, and Monocotyledons. Louisiana Dept. of Wildlife and Fisheries, Louisiana Natural Heritage Program, Baton Rouge, Louisiana.

Turner, B.L., H. Nichols, G. Denny and O. Doron. 2003. Atlas of the Vascular Plants of Texas. Vol. 2, Ferns, Gymnosperms, Monocots. Sida, Bot. Misc. 24(2): 649–888.

Van Kley, J. 2010. Pineywoods Plants Digital Gallery (Version 8.04). Dept. of Biology, Stephen F. Austin State Univ., Nacogdoches, Texas. <http://www.fp.sfasu.edu/jamesvankley/> Accessed April 2010.

Wikipedia. 2010. *Narcissus* (plant). <http://en.wikipedia.org/wiki/Narcissus_(genus)> Accessed April 2010.

Photos (Online Appendix 1, Harrison Co.)

1. Mixed populations of *Leucojum aestivale* and *Narcissus* ×*intermedius*. Harrison Co., se of Marshall (*Nesom 2010-1*, *Nesom 2010-2*).

2, 3, & 4. Plants of *Leucojum aestivale*. Harrison Co., se of Marshall (*Nesom 2010-1*).

5 & 6. Plants of *Narcissus* ×*intermedius*. Harrison Co., se of Marshall (*Nesom 2010-2*).

7 & 8. Population of *Narcissus jonquilla*. Van Zandt Co., nw of Canton (*Nesom 2010-3*).

9 & 10. Plants of *Narcissus jonquilla*. Van Zandt Co., nw of Canton.

Photos (Online Appendix 2, Gregg Co.)

1 & 2. Mixed populations of *Narcissus* ×*intermedius* (*Nesom 2010-4*) and *N.* ×*odorus* (*Nesom 2010-5*). Gregg Co., w of Longview. Most plants are *N.* ×*intermedius*.

3, 4, & 5. Plants, flowers, and fruits of *Narcissus* ×*intermedius*. Gregg Co., w of Longview.

6. Flower of *Narcissus* ×*odorus*. Gregg Co., w of Longview.